

Remarks/Arguments

Reconsideration of the above-identified application in view of the present amendment is respectfully requested. By the present amendment, claims 1, 14, and 17 have been amended. Claims 18-20 have been added.

Preliminary Matters

The Applicant wishes to thank the Examiner for the courtesies extended during the telephone interview of October 19, 2009. During the interview, the rejection of claim 1 under 35 U.S.C. §102 was discussed.

Claim Rejections under 35 U.S.C. §102

Claims 1, 5-10, 12-14, and 17 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 2,631,584 to Purificato (hereafter "Purificato"). It is respectfully submitted that amended claim 1 is patentable over Purificato and is therefore allowable.

Amended claim 1 recites an extraction device including an inner extraction member, an outer extraction member, and an extraction handle that rotates relative to the outer and inner extraction members in order to extract a pin. The outer and inner extraction members are provided with rotary preventing members that directly engage one another in order to prevent the inner extraction member from rotating relative to the outer extraction member during extraction of the pin. The rotary preventing members on the outer extraction member include non-circular cross-sectional parts of a through hole in the outer extraction member. The rotary preventing members of the inner extraction member include non-circular cross-sectional parts. The extraction handle can cooperate with the inner extraction

member in order to draw the inner extraction member backwards in a direction of extraction when the inner extraction member is inserted into the outer extraction member so that the rotary preventing members directly engage one another.

Purificato does not teach or suggest this structure. Purificato teaches a fracture securing instrument having a bolt 18 and a rod 22 connected together for inserting and removing a pin 10 into a nail 1. The bolt 18 and the rod 22 are moveably disposed within a sleeve 13, a pin guide 16, and a cap 14. The cap 14 is threaded to both the sleeve 13 and the bolt 18. A T-nut 19 is threaded to the bolt 18 and rotated in order to drive the bolt and, thus, the pin 10 through a hole 8 in the nail 1 and into bone (Col. 4, lines 13-22 and Fig. 5). When removal of the pin 10 from the bone is desired, the cap 14 is replaced with a cap 14', which is threaded only with the sleeve 13. The T-nut 19 is then pulled in a direction away from the sleeve 13 to axially draw the bolt 18 through the sleeve and the cap 14' and, thus, remove the pin 10 from the bone while the nail 1 remains in the bone (Col. 4, lines 22-40 and Fig. 6).

After the pin 10 is removed from the nail 1, the nail may be removed from the bone. When it is desirable to remove the nail 1 from the bone, the bolt 18 is connected to the nail 1 via a coupling member 25. The direct connection allows the nail 1 to be removed from the bone simply by pulling on the T-nut 19 connected to the bolt 18. Pulling the T-nut 19 causes the bolt 18 and, thus, the nail 1 to be pulled away from the bone relative to the sleeve 13 and the cap 14' (Col. 4, lines 28-32 and Fig. 7).

The Examiner asserts that the threads on the bolt 18 and the cap 14 constitute rotary preventing members. These structures, however, do not directly engage one another while the pin 10 is being extracted from the bone. Rather, the cap 14 is replaced with the cap 14' specifically to remove any direct engagement between the cap and the bolt 18 to allow the bolt to be axially pulled with the pin 10 relative to the sleeve 13 and the cap in order to extract the pin from the bone, see column 3, lines 48-54 and column 4, lines 22-27. Likewise, as noted, the cap 14' is provided on the sleeve 13 during extraction of the nail 1 to allow the bolt 18 and, thus, the nail secured thereto to be axially pulled relative to the sleeve and the cap to remove the nail from the bone.

Since the bolt 18 does not directly engage the cap 14' or the sleeve 13 during extraction of the pin 10 and the nail 1, the bolt is rotatable relative to the sleeve during extraction of the pin and the nail. Therefore, Purificato does not teach any structure which prevents rotation of the bolt 18 relative to the sleeve 13 or the cap 14' during extraction of the pin 10 and the nail 1. Accordingly, Purificato does not teach or suggest outer and inner extraction members that are provided with rotary preventing members that directly engage one another in order to prevent the inner extraction member from rotating relative to the outer extraction member during extraction of a pin.

Furthermore, the bolt 18 threadably engages the cap 14 during insertion of the pin 10 through the nail 1 and into the bone, see Fig. 5. The bolt 18 rotates relative to the cap 14 and the sleeve 13 to move the pin 10 through the nail 1 and

into the bone. Accordingly, the threads on the cap 14 do not prevent relative rotation between the bolt 18 and the sleeve 13.

Regardless, the threads on the bolt 18 and the cap 14 do not have a non-circular cross-sectional shape. Rather, as clearly shown in Fig. 5, both sets of threads have a circular cross-section. Accordingly, Purificato does not teach or suggest rotating preventing members that have a non-circular cross-sectional shape. For these reasons, it is respectfully submitted that amended claim 1 is patentable over Purificato and is therefore allowable.

Claims 6-10 and 12-14 depend from claim 1 and are allowable for at least the same reasons as claim 1 and for the specific limitations recited therein.

Claim 5 recites that a tip of the pin is situated in an opening of the sleeve and cooperates with a rear edge of the opening such that the pin, through cooperation with the rear edge of the opening, draws the sleeve backwards in the direction of extraction when the sleeve is pulled out of the bone fragment by the extraction handle.

Purificato does not teach or suggest this structure. In Purificato, the entire pin 10 is removed from the nail 1 before the nail is removed from the bone (Col. 4, lines 28-31 and Fig. 7). The pin 10, therefore, does not act to pull any portion of the nail 1 or any other element of the fracture securing instrument out of the bone. For these reasons, Purificato does not teach or suggest a tip of a pin that cooperates with an edge of a sleeve to draw the sleeve backwards when the sleeve is pulled out of a bone by an extraction handle. Accordingly, it is respectfully submitted that claim 5 is patentable over Purificato and is therefore allowable.

Amended claim 17 recites an extraction device having an inner extraction member connectable to a pin, an outer extraction member, and an extraction handle that rotates relative to the outer and inner extraction members in order to extract the pin in an extraction direction relative to the outer extraction member. The outer and inner extraction members are provided with rotary preventing members that directly engage one another to prevent the inner extraction member from rotating relative to the outer extraction member during extraction of the pin. The rotary preventing members on the outer extraction member are non-circular cross-sectional parts of a through hole in the outer extraction member. The rotary preventing members of the inner extraction member are non-circular cross-sectional parts.

As noted, Purificato does not teach or suggest rotary preventing members that directly engage one another to prevent inner and outer extraction members from rotating relative to one another during extraction of a pin. Therefore, Purificato also does not teach or suggest non-circular cross-sectional rotary preventing members. Accordingly, it is respectfully submitted that amended claim 17 is patentable over Purificato and is therefore allowable.

Claim Rejections under 35 U.S.C. §103

Claim 11 was rejected under 35 U.S.C. §103(a) as being unpatentable over Purificato in view of U.S. Patent Appln. No. 2001/0056283 to Carter et al. Claim 11 depends from claim 1 and is allowable for at least the same reasons as claim 1 and for the specific limitations recited therein.

New Claims

Claim 18 recites that the rotary preventing members of the outer extraction member include at least one axially extending flat surface on the outer extraction member. The rotary preventing members of the inner extraction member include at least one axially extending flat surface on the inner extraction member that directly engages the at least one axially extending flat surface on the outer extraction member.

Purificato does not teach or suggest this structure. As noted, the alleged rotary preventing members in Purificato, i.e., the threads on the bolt 18 and the cap 14, have a circular cross-section. Neither of the threads on the bolt 18 or the cap 14 therefore constitute or include an axially extending flat surface. For these reasons, it is respectfully submitted that claims 18 and 20 are patentable over the art of record and are therefore allowable.

Claims 19 and 20 recite that the rotary preventing members prevent the inner extraction member from rotating relative to the outer extraction member about a longitudinal axis of the inner extraction member in first and second opposite directions. Purificato does not teach or suggest this structure. As noted, no structure in Purificato prevents rotation of the bolt 18 relative to the sleeve 13 and the cap 14' during extraction of the pin 10 and the nail 1. Furthermore, there is no structure which prevents the bolt 18 from rotating in first and second opposite directions relative to the sleeve 13. More specifically, in Fig. 5, rotation of the bolt 18 in a counterclockwise or otherwise unthreading direction causes the socket 23 of the bolt to move axially away from the rod 22 and thereby allow the bolt to continue

upward axial movement relative to the sleeve 13 and the cap 14 until the bolt completely unthreads from the cap.

In Figs. 6-7, since the cap 14' is unthreaded there is no direct engagement between the bolt 18 and/or the rod 22 and the sleeve 13, thereby allowing the bolt to be pulled axially and rotated relative to the sleeve via the T-nut 19. In other words, no structure in Figs. 6-7 prevents rotation of the bolt 18 relative to the sleeve 13 and the cap 14' while the pin 10 and the nail 1 is extracted. Accordingly, Purificato does not teach or suggest rotary preventing members that prevent an inner extraction member from rotating relative to an outer extraction member in first and second opposite directions. For these reasons, it is respectfully submitted that claims 19 and 21 are patentable over the art of record and therefore allowable.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and allowance of the application is respectfully requested.

Please charge any deficiency or credit any overpayment in the fees for this matter to our Deposit Account No. 20-0090

Respectfully submitted,

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